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Title: **JP11240970A2: POROUS MEMBRANE AND SEPARATOR USING THE SAM AND USED FOR BATTERY**

Derwent Title: Porous film for use as separator in batteries and portable electronic devices - has specific electrical resistance before and after heat processing and ion permeability interruption temperature [\[Derwent Record\]](#)

Country: **JP** Japan
Kind: **A**

Inventor: **NISHIYAMA SOJI;**
MATSUSHITA KIICHIRO;
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Assignee: **NITTO DENKO CORP**
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Published / Filed: **1999-09-07 / 1998-02-24**

Application Number: **JP1998000042515**

IPC Code: **[C08J 9/00](#); [C08K 5/20](#); [H01M 2/16](#); [C08L 23/02](#);**

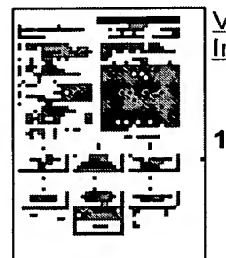
Priority Number: 1998-02-24 **[JP1998199842515](#)**

Abstract: **PROBLEM TO BE SOLVED:** To provide a porous membrane having a low shutdown(SD)-initiating temperature and a large SD rate and useful as a separator for a battery.
SOLUTION: This porous membrane is formed from a mixture of a polyolefin with a substance which has a lower melting point than that of the polyolefin and is incompatible with the polyolefin. The substance comprises at least one of a resin having a viscosity-average mol.wt. of 100-10,000 and an aliphatic compound having 9-22 carbon atoms in the aliphatic chain. When the ion transmission-interrupting temperature of the porous membrane is set to a range of 105-130°C, and when the electric resistance of the porous membrane is measured on the basis of JIS C 2313, the electric resistance value of the porous membrane after a thermal treatment at 130°C for 0.6 sec is set to ≥20 times an electric resistance before the treatment. Polypropylene and highly dense polyethylene wax may be used as the polyolefin and the substance, respectively.
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Family: None

Forward References: **Go to Result Set: [Forward references \(2\)](#)**

PDF	Patent	Pub.Date	Inventor	Assignee	Title
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Best Available Copy

	US6749961	2004-06-15	Nguyen; Khuy V.	Celgard Inc.	Shutdown battery separator made w a blend of polymer and oligomer
	US6586912	2003-07-01	Tsukamoto; Hisashi	Quallion LLC	Method and apparatus for amplitude limiting battery temperature spikes

Other Abstract Info:

CHEMABS 131(14)186015K CHEMABS 131(14)186015K DERABS C1999-555112 DERABS C1999-555112



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PATENT ABSTRACTS OF JAPAN(21) Application number: **10042515**(51) Intl. Cl.: **C08J 9/00 C08K 5/20 H01M 2/16**(22) Application date: **24.02.98**

(30) Priority:

(43) Date of application publication: **07.09.99**

(84) Designated contracting states:

(71) Applicant: **NITTO DENKO CORP**(72) Inventor: **NISHIYAMA SOJI
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(74) Representative:

**(54) POROUS MEMBRANE
AND SEPARATOR USING
THE SAME AND USED FOR
BATTERY**

(57) Abstract:

PROBLEM TO BE SOLVED: To provide a porous membrane having a low shutdown(SD)-initiating temperature and a large SD rate and useful as a separator for a battery.

SOLUTION: This porous membrane is formed from a mixture of a polyolefin with a substance which has a lower melting point than that of the polyolefin and is incompatible with the polyolefin. The substance comprises at least one of a resin having a viscosity-average mol.wt. of 100-10,000 and an aliphatic compound having 9-22 carbon atoms in the aliphatic chain. When the ion transmission-interrupting temperature of the porous membrane is set to a range of 105-130°C, and when the electric resistance of the porous membrane is

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